

REMARKS

The present Amendment is in response to the Examiner's Office Action mailed December 1, 2005. Claims 1, 10, 18, 20, and 22-24 are amended and claims 3 and 12 are cancelled. Claims 1, 2, 4-11, and 13-24 are now pending in view of the above amendments. Support for the claim amendments and new claims can be found in the application and claims as filed, for example at paragraph 68.

Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience and reference, unless otherwise noted Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

Please note that the following remarks are not intended to be an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed below are presented solely by way of example to illustrate some of the differences between the claimed invention and the cited references. In addition, Applicants request that the Examiner carefully review any references discussed below to ensure that Applicants understanding and discussion of the references, if any, is consistent with the Examiner's understanding.

I. Information Disclosure Statement

An information disclosure statement is attached hereto to specifically reference U.S. Patent No. 5,903,588. Consideration of this reference is respectfully requested.

II. Rejections Under 35 U.S.C. §102 (a/b/e)

The Examiner rejects claims 1, 10, and 21-23 under 35 U.S.C. § 102(a) and (e) as being anticipated by *Ouchi '713* (United States Patent No. 6,597,713).

Because *Ouchi '713* does teach or suggest each and every element of the rejected claims as presently recited, Applicant respectfully traverses this rejection in view of the following remarks.

Figure 6 in *Ouchi '713* discloses an enclosed “common support” that is perpendicular to a base through which lead wires 2311 and 2312 pass. Neither of the wire leads and the can 2313 contact the common support.

In direct contrast, present claim 1 recites, *inter alia*: “a substantially planar submount having a plurality of conductive traces on a surface thereof; a metallic can attached to the planar surface of said submount, forming a cavity having the planar surface of said submount on a first surface thereof and said can on at least a second surface thereof, said cavity having an opening for light to pass through; . . . wherein said plurality of conductive traces extend along the planar surface of the submount from inside the cavity to beyond the can.” Figure 6 in *Ouchi '713* does not teach or suggest any of the foregoing.

Figure 19 in *Ouchi '713* discloses a U shaped ceramic heat sink 140 (referred to in the Office Action as a “submount”) encompassing an electrode 7 and a laser substrate 21 (collectively referred to in the Office Action as “can”). The terminal ends of the “submount” and the “can” are in contact with a wiring electrode 112. The wiring electrode 112 is mounted on wiring substrate 130 (referred to in the Office Action as “window”). Mounted integrally on the “can,” or electrode 7, are a series of layers that form a VCSEL array. As seen in Figure 19, a cavity is formed between the VCSEL array and the wiring substrate with the conductive trace 112 and solder (labeled solder 13 in Figure 17) forming the lateral walls thereof.

In direct contrast to *Ouchi '713*, claim 1 recites, *inter alia*, “a substantially planar submount having a plurality of conductive traces on a planar surface thereof” and “wherein said plurality of conductive traces extend along the planar surface of the submount from inside the cavity to beyond the can.” *Ouchi '713* teaches only that terminal portions of submount “heat sink 140” contact the “wiring electrode 112.”

Also in direct contrast to *Ouchi '713*, claim 1 recites, *inter alia*, “a metallic can attached to the planar surface of said submount forming a cavity having the planar surface of said submount on a first surface thereof and said can on at least a second surface thereof, said cavity having an opening for light to pass through.” Initially, *Ouchi '713* discloses a ceramic heat sink, not a metallic can. As to obviousness, a metallic can would be an unsuitable substitute for a ceramic heat sink since it would not perform requisite functions of a heat sink. Even if the metallic limitation were absent, however, *Ouchi '713* does not teach or suggest that the can and

the submount form a “a cavity having the planar surface of said submount on a first surface thereof and said can on at least a second surface thereof” or a “cavity having an opening for light to pass through.” Rather, *Ouchi* ‘713’s heat sink 140, electrode 7 and laser substrate 21 are entirely coextensive and at no point form a space that could be termed a cavity.

Regarding claim 10, claim 10 recites, *inter alia*: “a substantially planar submount comprising a substantially planar surface; a plurality of thru-via conductive contacts passing through said planar surface.” *Ouchi* ‘713 has no such teaching. Rather, in Figure 6 the conductive contacts do not even contact the submount. In Figure 19, the wiring electrodes 130 are disposed between terminal ends of the heat sink and glass wiring substrate 130, passing through neither.

Ouchi ‘713 also does not disclose claim 10’s plurality of opto-electronic devices in communication with the recited conductive contacts passing through the planar surface.

Ouchi ‘713 also does not teach claim 10’s recited “metallic can attached to the planar surface of said submount and forming a cavity.”

Regarding claims 22 and 23, *Ouchi* ‘713 does not teach or disclose, in combination with the other recited elements of base claims 1 and 10, “wherein said transparent window is bounded laterally by said metallic can.”

Since *Ouchi* ‘713 does not teach the device being claimed in claims 1 and 10 in this application, Applicants respectfully request that the rejection of claim 1, 10, and 21-23 under 35 U.S.C. § 102(a) and (e) be withdrawn.

III. Rejections Under 35 U.S.C. § 103

Dependent claims 2-9 and 11-17

The Examiner variously rejects claims 2-9 and 11-17 under 35 U.S.C. § 103 as being unpatentable over *Ouchi* ‘713 in view of general knowledge in the art, *Brand et al.* (United States Patent No. 6,604,488); *Jansson et al.* (United States Patent No. 6,594,050); and *Takagi* (United States Publication No. 2003/0127661 A1).

The rejected claims 2-9 and 11-17 each depend from one of independent claim 1 and 10. Because claims 2-9 and 11-17 each therefore include the limitations of either claim 1 or claim 10, claims 2-9 and 11-17 are patentable over the cited references for at least the reasons

presented hereinabove with respect to those independent claims. Accordingly, the removal of the rejection of claims 2-9 and 11-17 under 35 U.S.C. § 103 is respectfully requested.

Independent Claim 18 and Dependent Claims 19, 20, and 24

The Examiner rejects claims 18-24 under 35 U.S.C. § 103 as being unpatentable over *Ouchi '713* in view of general knowledge in the art and further in view of *Recktenwald et al.* (United States Publication No. US2003/0015776) and *Graves et al.* (United States Patent No. 6,606,427).

Applicant traverses the Examiner's rejection of claims 18-24 for obviousness on the grounds that the references – either individually or in combination – fail to teach or suggest each and every element of the rejected claims.

Ouchi '713 discloses fiber guiding holes 142 that are etched in a silicon substrate 141. Fibers 143 are inserted and fixed via epoxy in the fiber guiding holes 142. Col. 16, ll. 32-38.

Recktenwald discloses an electronic press fit receptacle connector 28 having a row of electronic press fit tails 30 that mate with a row of plated through holes 8. Plated through holes 8 are in electrical communication with a VCSEL, which in turn can emit an optical signal into an optical fiber cable 24. *Recktenwald* cannot have a plurality of optical fibers and openings that align with press fit tails 30 (as suggested at page 9 of the Office Action) because this entire portion of the device in *Recktenwald* is electrical, not optical. VCSEL 10 emits *towards* optical chip fiber adapter 36 and optical fiber cable 24, NOT towards connector 28. Hence, everything to the left of VCSEL 10 in Figure 4 is electrical, not optical.

In direct and stark contrast to the foregoing, claim 18 recites, “a metallic support comprising a central body, parallel legs, and guide pins, wherein said support is attached to said substantially planar submount and forms a cavity with an opening for light to pass through; . . . wherein a flexible ribbon-type optical cable having openings that align with the guide pins can be mounted between said parallel legs, said guide pins fitting into said openings when the flexible ribbon-type optical cable is attached to said support, whereby a plurality of optical fibers in said flexible ribbon-type optical cable are aligned with a corresponding plurality of said optoelectronic devices.” Neither of *Ouchi '713* and *Recktenwald* teach or suggest such a metallic support that both provides a framework for mounting and aligning a flexible ribbon type

connector and provides for a structure forming a cavity and housing opto-electronic devices as claimed above.

Recktenwald does not do either since it is an electrical device using conductive press fit pins for electrical communication.

Ouchi '713 requires multiple incongruous structures to accomplish different tasks than the presently recited support. For example, *Ouchi '713*'s fiber guiding holes etched in a silicon substrate receive optical fibers entirely rather than serve to align a ribbon fiber, and do not use guide pins. Also, silicon substrate 141 plus wiring substrate 130 plus wiring electrode 112 plus laser substrate 21 plus electrode 7 is much more complicated than the arguably comparable features of the recited "metallic support." In addition, the silicon substrate 141 plus wiring substrate 130 plus wiring electrode 112 plus laser substrate 21 plus electrode 7 is extremely different than the recited "metallic support" in that it does not provide the various advantages or functions the metallic support provides, for example acting as a Faraday cage and ease of assembly.

In addition, and also by contrast to the presently claimed invention, and as previously discussed, *Ouchi '713* does not teach or suggest a "cavity comprising said window on a first surface, said submount on an opposing surface, and said support on the surfaces interconnecting said window and said submount" as is presently claimed. The other cited references do not overcome this deficiency.

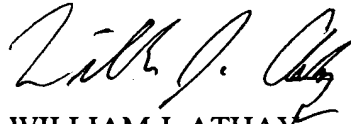
Accordingly, for at least the foregoing reasons, Applicant submits that the Examiner has failed to set forth a *prima facie* case for obviousness of the presently recited claim 18. Applicant also submits that, for at least the foregoing reasons, claims 19, 20, and 24 which depend from claim 18, are also patentable over the cited references.

CONCLUSION

In view of the foregoing, Applicants believe the claims as amended are in allowable form. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, or which may be overcome by an Examiner's Amendment, the Examiner is requested to contact the undersigned attorney.

Dated this 2nd day of May, 2005.

Respectfully submitted,



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